BRILKINA, T. G.

Dissertation: "Investigation of Organic Boron Complexes of Type M (BR$_4$). " Cand Chem Sci, Gor'kiy State U, Gor'kiy, 1954. Referativnyy Zhurnal--Khimiya, Moscow, No 8, Apr 54.

SO: SUM 284, 26 Nov 1954

Brilkina, T.G.

Complex compounds of type M(BAr₄). G. A. Razuvaev and T. G. Brilkina (State Univ., Gorki). Zhur. Obshchei Khim. 24, 1415-21(1954); cf. C.A. 48, 3180f.—Addn. of 30 ml. 0.3N MeLi in Et₂O under N₂ to 2.4 g. Ph₃B in Et₂O gave after evapn. a cryst. residue of Li[BPh₃Me], which decomposes on exposure to air; soln. in H₂O yields some Ph₃ and gives a basic soln.; fresh aq. solns. gave no ppts. with K or NH₄ salts, but on prolonged standing ppts. formed; thus NH₄[BPh₄] was obtained. Symmetrization of the complex accounts for formation of this substance. Similarly, 5.54 g. (1-C₁₀H₇)₃B.2C₆H₆ in Et₂O and 1.15N EtLi in C₆H₆ (9 ml.) gave a ppt., which after vacuum drying yielded an air-unstable Li[B(C₁₀H₇)₃Et]. Aq. soln. of this treated with KCl or NH₄Cl gave after several hrs. a ppt. of the corresponding K or NH₄ salt; only NH₄[B(C₁₀H₇)₄] was analyzed. Heating 5 g. KBPh with 80 ml. EtOCH₂CH₂OH and 20 ml. H₂O 5-7 hrs., followed by steam distn. of C₆H₆ gave AcH and PhOH, along with crude diphenylboric acid. Similar reaction of NH₄BPh₄ gave a loss of 1 Ph group (as C₆H₆) in 2 hrs.; the aq. residue contained PhOH and diphenylboric acid. Heating NH₄BPh₄ with dry MeOH in sealed tube 6 hrs. at 100° gave 60% NH₃, 100% loss of 1

Ph group (C₆H₆) and Ph₂BNH₂, m. 212-14°(38% yield); the aq. soln. contained PhOH. Refluxing 3 g. KB(C₁₀H₇)₄-Ph₄ in EtOCH₂CH₂OH 2 hrs. gave a basic soln. which yielded C₁₀H₈ and PhOH. Heating 3 g. NH₄B(C₁₀H₇)Ph₄ with 75 ml. EtOCH₂CH₂OH and 25 ml. H₂O 5 hrs. at reflux gave 1 g. C₁₀H₈ and 1.1 g. Ph₂BNH₂, along with some PhOH. Similar reaction of KBPh₃(C₆H₄Me-p) gave 96% MePh, and some PhOH. Similar reaction of KB(C₁₀H₇)₃Ph gave in 4 hrs. a loss of 2 C₁₀H₇ groups as C₁₀H₈, along with phenylboric acid. To 3.5 g. KBPh₄ in dry MeOH 8 ml. 1.25M Br₂ in MeOH was added; diln. with H₂O gave 1.5 g. PhBr, 1 g. Ph₃, 1 g. phenylboric acid. Similar reaction of LiBPh₃C₆H₄Me-p with Br₂ in aq. soln. gave p-BrC₆H₄Me (80%) and diphenylboric acid. Illumination of 3.5 g. KBPh₄ in CHCl₃ 100 hrs. gave some C₆H₆, Ph₃ and PhOH. To 4 g. KBPh₄ in dry Me₂CO 7.3 g. dry FeCl₃ was added. The mixt. heated 0.5 hr. gave on diln. 64% C₆H₆ (based on loss of 1 Ph group), 1.3 g. Ph₃ and phenylboric acid; the soln. gave tests for ferric and ferrous ions.   G. M. Kosolapoff

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$5.3700 (B)$

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SOV/81-59-5-15249

Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 5, p 167 (USSR)

AUTHORS: Razuvayev, G.A., Brilkina, T.G.

TITLE: An Investigation of Free-Radical Reactions of the $M[BR_4]$ Complexes

PERIODICAL: Uch. zap. Gor'kovsk. un-ta, 1958, pp 169 - 173

ABSTRACT: It is shown that when $Li[B(C_6H_5)_4]2LiBr$ (I) interacts with Hg in
             $CHCl_3$, C_6H_5HgCl is formed, which proves that the $M[B(C_6H_5)_4]$-type
             complex compounds are capable of reacting with Hg with the
             formation of only one free radical from the elementorganic anion.
             $NH_4[B(C_6H_5)_3C_{10}H_7]$ (II) and $K[B(C_6H_5)_3C_{10}H_7]$ (III), when reacting
             with Hg in $CHCl_3$ form α-dinaphthyl mercury, which, in addition
             to the absence of phenyl derivatives of mercury, points to the
             primary break of the naphthyl radicals from the complex anions
             studied. The thermal decomposition of II at 120 - 130°C causes
             the formation of naphthalene and triphenyl boron ammoniate, i.e.,
             the mechanism of the thermal decomposition of the anion also
Card 1/2   takes place with the separation of one naphthyl radical from the

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An Investigation of Free-Radical Reactions of the $M[BR_4]$ Complexes

complex. II and III are obtained by their precipitation from the aqueous solution of $Li[B(C_6H_5)_3C_{10}H_7]$, which is synthesized similarly to I (G. Wittig and others. Liebigs Ann. Chem., 1949, Vol 563, p 110), with the addition of NH_4Cl or KCl, respectively.

V.A.

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88569

5.3700

S/020/61/136/001/017/037
B016/B055

AUTHORS: Aleksandrov, Yu. A., Brilkina, T. G., and Shushunov, V. A.

TITLE: Bistriethyl-lead Oxide

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 1, pp. 89-92

TEXT: Bistriethyl-lead oxide, $((C_2H_5)_3Pb)_2O$, was synthesized with a view to establishing its properties and studying it in detail. In an earlier work the authors had found that bistriethyl-lead oxide has a marked accelerating effect on the oxidation of hexaethyl dilead by oxygen. They assume this effect to be due to free radicals formed by decomposition of bistriethyl-lead oxide. Basing on their own results, they state that this compound has never actually been obtained by other researchers (Refs. 2-4), since bistriethyl-lead oxide hydrolizes in alcoholic and aqueous solutions. The authors therefore applied a different method: They dispersed metallic sodium in n-nonane, removing the n-nonane thereafter by decanting and distilling off, and then poured on dry benzene. To this mixture they added a triethyl lead monohydroxide portion so calculated that sodium was well

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* Bistriethyl-lead Oxide

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B016/B055

in excess. In the course of 2-3 h triethyl lead monohydroxide was trans-
formed into bistriethyl-lead oxide which is readily soluble in benzene.
After filtering off the solid residue, and distilling off the benzene,
bistriethyl-lead oxide was obtained as mobile, faintly yellowish-green
liquid with a sharp specific smell. At room temperature, bistricthyl-lead
oxide hydrolizes to triethyl lead monohydroxide (to an extent of 98-99%).
Alcohols and tertiary alkyl- and aryl hydroperoxides act similarly to
water, transforming the bistriethyl-lead oxide to oxy- or peroxy compounds
of triethyl lead, besides triethyl lead monohydroxide. At temperatures of
only $-10^\circ C$, several of these reactions occur at an appreciable rate. The
authors studied the effect of methyl-, ethyl- and benzyl alcohol, dimethyl-
phenyl carbinol, tert-butyl- and α-isopropyl phenyl hydroperoxide on
bistriethyl-lead oxide. The following compounds were obtained: ethoxy
triethyl lead, terto-butoxy triethyl lead, α-isopropyl-phenyl peroxy
triethyl lead, methoxy triethyl lead and α-isopropyl-phenoxy triethyl lead.
The organic oxy- and peroxy compounds of lead are unstable and decompose
gradually at room temperature in sealed ampoules, accompanied by a color-
change to redbrown. Bistriethyl-lead oxide reacts vigorously with acetone
at room temperature, under formation of triethyl lead monohydroxide. In

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Bistriethyl-lead Oxide

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the presence of a great excess of acetone, mesityl oxide and a resin which was not further investigated were formed. On heating, bistriethyl-lead oxide decomposes comparatively rapidly with liberation of an equimolecular mixture of ethane and ethylene, and 1% butane. The residue is tetraethyl lead (Ref. 7). There are 2 figures, 1 table, and 7 references: 2 Soviet, 2 German, 2 US, and 1 British.

ASSOCIATION: Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosudarstvennom universitete im. N. I. Lobachevskogo (Scientific Research Institute of Chemistry of the Gor'kiy State University imeni N. I. Lobachevskiy)

PRESENTED: July 4, 1960, by M. I. Kabachnik, Academician

SUBMITTED: July 4, 1960

Card 3/3

S/030/61/000/004/013/015
B105/B206

AUTHORS: Razuvayev, G. A., Corresponding Member AS USSR, Latyayeva,
V. N., Candidate of Chemical Sciences, Brilkina, T. G.,
Candidate of Chemical Sciences

TITLE: Homolytic reactions in the liquid phase

PERIODICAL: Vestnik Akademii nauk SSSR, no. 4, 1961, 124-127

TEXT: The first simpozium po gomoliticheskim reaktsiam v zhidkoy faze
(Symposium on Homolytic Reactions in the Liquid Phase) held in Gor'kiy and
Dzerzhinsk from December 7-10, 1960, is described. The Symposium which was
attended by about 500 chemists, was convened by the Nauchnyy sovet po teo-
rii khimicheskogo stroyeniya, kinetike i reaktsionnoy sposobnosti Otdele-
niya khimicheskikh nauk Akademii nauk SSSR (Scientific Council for the Theo-
ry of Chemical Structure, Kinetics and Reactivity of the Department of
Chemical Sciences AS USSR), the Gor'kovskiy nauchno-issledovatel'skiy insti-
tut khimii (Gor'kiy Scientific Research Institute of Chemistry) and the ob-
lastnoye otdeleniye Vsesoyuznogo khimicheskogo obshchestva im. D. I. Mende-
leyeva (Rayon Department of the All-Union Chemical Society imeni D. I. Men-

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S/030/61/000/004/013/015
B105/B206

deleyev). The following reports are mentioned: By the method of electron-
ic paramagnetic resonance, V. V. Voyevodskiy clarified the structure of ben-
zene chromate cations as well as the aromatic ionic radicals, and establish-
ed the formation of hydrogen atoms during the irradiation of the system Fe^{2+}
$+H_2SO_4+H_2O$ at $77°K$ by means of ultraviolet light; M. B. Neyman, A. L. Bucha-
chenko reported on the formation of stable radicals which can serve as basis
for the determination of active, short-lived radicals; A. N. Terenin, B. L. Kur-
batov, R. F. Vasil'yev, A. A. Vichutinskiy, O. N. Karpukhin, L. M. Postnikov, and
V. Ya. Shlyapintokh reported on the method of chemiluminescence; K. S. Bagdasark
yan, R. I. Milyutinskaya, E. A. Trosman, and V. A. Borovkova investigated the
reactions of the phenyl- and nitrophenyl radicals with aromatic compounds by
the kinetic method; V. F. Tsepalov found an expression for the rate of con-
sumption of an arbitrary component as function of the concentration of reacti-
ing substances; N. M. Emanuel' discovered the dependence of the oxidizing of
liquefied hydrocarbon on the concentration of the solvent; N. M. Emanuel',
E. K. Mayzus, and I. P. Skibida reported on the production of alcohols and
ketones according to the chain- and molecular method of the oxidation of
n-decane; B. V. Yerofeyev reported on complementing the previous theory of
primary initiating by a secondary initiating; K. I. Ivanov and Ye. D.
Card 2/5

Homolytic reactions ...   S/030/61/000/004/013/015
                                           B105/B206

Vilyanskaya showed that aniline added to an oil already in a state of oxida-
tion is converted into a product behaving similar to a peroxide radical which
accelerates the reaction; B. A. Redoshkin and V. A. Shushunov showed the
dual effect of metal salts of variable valency; A. T. Buchachenko, M. R.
Neyman, and K. Ya. Kaganskaya determined the average lifetime of peroxide
radicals of trimethyl heptane (3.5 sec); I. V. Berezin, K. Vatsek, Go Chu,
and N. F. Kazanskaya classified a number of free radicals according to their
kinetic indices; Ye. N. Gur'yanova, I. G. Chernomorskaya, and M. S. Fel'd-
shteyn discovered the direct dependence between exchangeability of the
compounds S-S, S-N, S-C and their vulcanizing activity; G. A. Razuvayev,
G. G. Petukhov, Ye. V. Mitrofanova, and V. N. Latvaveva showed that the use
of isotope methods permits the discovery of new reactions during the oxida-
tion of organometallic compounds, which cannot be determined by other meth-
ods; V. A. Shushunov, Yu. A. Aleksandrov, and T. G. Brilkina submitted a
scheme of the oxidation process of the organometallic compounds investigated;
N. S. Vyazankin, G. A. Razuvayev, Yu. I. Dergunov, and O. A. Shchepetkova
reported on the homolytic cleavage of elementary compounds; Yu. A. Ol'dekop
and N. M. Mayer reported on the mechanism of the homolytic synthesis of
organometallic compounds; N. P. Khyrak and V. A. Pal'm reported on the homo-

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lytic character of the formation of organomagnesium compounds; A. V. Savitskiy and Ya. K. Syrkin reported on the spectrophotometric investigations which were utilized for determining the thermodynamic indices of the oxidation reactions of ferrocene and rutheniumcene by means of iodine; G. I. Nikishin and V. D. Vorob'yev reported on the linkage of the alcohols C_5-C_{10} to α-olefins of the composition C_6-C_{13}; G. I. Nikishin, Yu. N. Ogibin, and A. D. Petrov reported on esters of dicarboxylic acids which are linked to γ-olefins under formation of esters of α-alkyl carboxylic acids; G. A. Razuvayev and L. S. Boguslavskaya reported on the production of glycol esters; M. G. Gonikberg and V. M. Zhulin reported on the production of an unstable polymer at a pressure of 5000 kg/cm^2, which is depolymerized at customary pressure; A. P. Meshcheryakov and I. Ye. Dolgiy reported on the production of substituted cyclopropane derivatives by addition of methylene radical and its derivatives on alkene; A. N. Nesmeyanov, R. Kh. Freydlina, V. N. Kost. M. Ya. Khorlina, T. T. Sidorova, R. G. Petrova, and A. B. Terent'yev arranged the investigated radicals according to their relative stability; M. F. Shostakovskiy, Ye. N. Prilezhayeva, and L. V. Tsymbal reported on heterolytic reactions of the additions which are strictly subordinated to the rule of transaddition; G. M. Strongin reported on the conforma-

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Homolytic reactions ...

S/030/61/000/004/013/015
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tion of products of the homolytic addition of chlorine on benzene. The delegates of the Symposium expressed the wish to discuss regularly chemical problems connected with the homolytic reaction in the liquid phase.

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30204

S/001/61/000/019/032/085
B110/B138

5 3700

AUTHORS: Aleksandrov, Yu. A., Brilkina, T. G., Shushunov, V. A.

TITLE: Oxidation of organometallic compounds. 3. Synthesis and some properties of triethyl lead oxide

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 19, 1961, 145, abstract 19Zh44 (Tr. po khimii i khim. tekhnol. (Gor'kiy), no. 3, 1960, 381-387)

TEXT: The oxide of triethyl lead (I) was obtained by reaction of disperse metallic Na with triethyl lead monohydroxide (II) in benzene. I decomposes at ~ 20°C, reacts vigorously with acetone and acetaldehyde, and reacts instantaneously with water to form II quantitatively. When reacting with methyl, ethyl, benzyl, and α,α-dimethyl-benzyl alcohols, as well as with hydroperoxides of tert-butyl and α-cumyl, I gives the corresponding oxy and peroxy derivatives of triethyl lead, which are unstable at ~20°C. The rate of thermal decomposition of I at 70-90°C without solvent was studied. The products obtained consist of an equimolar mixture of C_2H_6 and C_2H_4 (with an impurity of 1-1.5 % of butane), 0.97 mole of Card 1/2

Oxidation of organometallic...

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B110/B138

triethyl lead per mole of used I, and a solid substance containing 87.1 %
of Pb, which is insoluble in organic solvents. The authors assume that
the accelerating effect of I on the oxidation of hexaethyl dilead by O_2
in n-nonane solution is caused by the ability of I to decompose with
the formation of ethyl radicals, whereby a degenerate chain reaction is
effected. For Report 2 see RZC, 1961, 8Zh231. [Abstracter's note:
Complete translation.]

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S 3700

S/081/61/000/024/011/086
B138/B102

AUTHORS: Aleksandrov, Yu. A., Brilkina, T. G., Shushunov, V. A.

TITLE: Oxygen oxidation of distannic ethide, diplumbic ethide and tetraethyl lead

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1961, 75, abstract 24B541 (Tr. po khimii i khim. tekhnol., [Gor'kiy], no. 1, 1961, 3 - 11)

TEXT: The oxidation of distannic ethide (I), diplumbic ethide (II) and tetraethyl lead (III) by oxygen was studied in solutions of n-C_9H_{20} and $C_6H_3Cl_3$ at 50 - 90°C. Additions of triethyl-tin peroxide cause considerable acceleration of oxidation of I, although the initial increase is not sustained, the reaction rate returning to normal in the course of time. The products of oxidation of I are tin diethyl oxide, tin triethyl oxide, CH_3CHO and H_2O. Activation energy of the process is 19.5 kcal/mol. In oxidation of II lead oxide, III, C_2H_5OH, CH_3CHO, and H_2O are formed.

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Oxygen oxidation of distannic... .   S/081/61/000/024/011/086
                                             B138/B102

The dependence of oxidation rate of II on temperature and initial
concentration is of a critical nature. Considerable variations in the rate
of the process are observed with very slight (60 to 62.5°C for instance)
variations in these parameters. Additions of lead triethyloxide accelerate
oxidation of II, and additions of H_2O retard it. C_2H_6, C_2H_4, C_4H_{10}, CH_3CHO,
H_2O, the 1-hydro-2-oxide of triethyl lead, the 2-hydro-2-oxide of diethyl
lead, and the mono- and dioxide of lead are formed in oxidation of III.
Addition of solid oxidation products considerably accelerates oxidation of
III. [Abstracter's note: Complete translation.]

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ALEKSANDROV, Yu.A.; BRILKINA, T.G.; SHUSHUNOV, V.A.

   Triethyllead oxide. Dokl.AN SSSR 136 no.1:89-92 Ja '61.

                                  (MIRA 14:5)

1. Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom gosu-
darstvennom universitet im. N.I.Lobachevskogo. Predstavleno akademikom
M.I.Kabachnikom.

                (Lead compounds)

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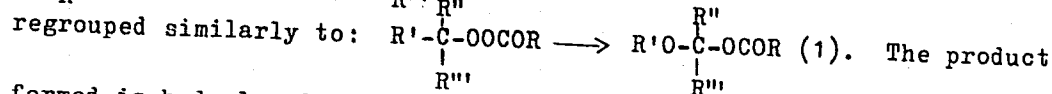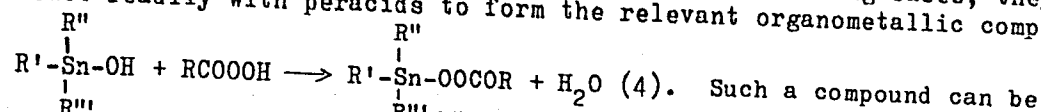
S/020/61/141/006/017/021
B103/B147

AUTHORS: Shushunov, V. A., and Brilkina, T. G.

TITLE: Regrouping of some organotin and organolead peroxide
             compounds

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 6, 1961, 1391-1394

TEXT: The regrouping of Sn and Pb peroxide compounds was studied. Since
the monohydroxides of trialkyl and triaryl tin are strong bases, they
react readily with peracids to form the relevant organometallic compounds:

$$R'-\underset{\underset{R'''}{|}}{\overset{\overset{R''}{|}}{Sn}}-OH + RCOOOH \longrightarrow R'-\underset{\underset{R'''}{|}}{\overset{\overset{R''}{|}}{Sn}}-OOCOR + H_2O \quad (4).$$ Such a compound can be

regrouped similarly to: $R'-\underset{\underset{R'''}{|}}{\overset{\overset{R''}{|}}{C}}-OOCOR \longrightarrow R'O-\underset{\underset{R'''}{|}}{\overset{\overset{R''}{|}}{C}}-OCOR \quad (1).$ The product

formed is hydrolyzed with separation of the relevant organometallic oxide
and other oxygen-containing compounds. A homogeneous reaction mixture
of equimolar quantities of triphenyltin monohydroxide with a) peracetic,
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Regrouping of some organotin and...   S/020/61/141/006/017/021
                                        B103/B147

or b) perpropionic acids at $0^\circ C$ was kept in the dark at room temperature. Within 40 - 50 hr, the peroxide compounds in the solutions were completely consumed and gradually well-defined needle crystals were precipitated without gas liberation. In cases a) and b) they were insoluble in cold and poorly soluble in hot benzene. In case a) it was a non-meltable product up to $230^\circ C$, in case b) the product could be softened at $170^\circ C$ and formed a non-melting compound on further heating. Acid hydrolysis resulted in the formation of free acetic and propionic acids, respectively. On the basis of their quantities and the amount of $(C_6H_5)_2Sn(OH)Cl$ (melting point $185^\circ C$) formed on heating of the precipitations with HCl, the formation of $(C_6H_5)_2Sn(OH)OCOCH_3$ or $(C_6H_5)_2SnO \cdot (C_6H_5)_2Sn(OCOCH_3)_2$ is assumed in the regrouping. The yield was 72% in case a) and 45% in case b). A considerable quantity of finely crystalline substance, insoluble in water but soluble in methanol, (melting point 128 - $130^\circ C$) was obtained by alkaline hydrolysis of the alcohol-dissolved compound; under the effect of HCl, this substance is converted to $(C_5H_6)_2Sn(OH)Cl$.

In both cases, 90% of phenol (related to the hydroxide) was isolated after separation of the solid products and the unreacted initial hydroxide.
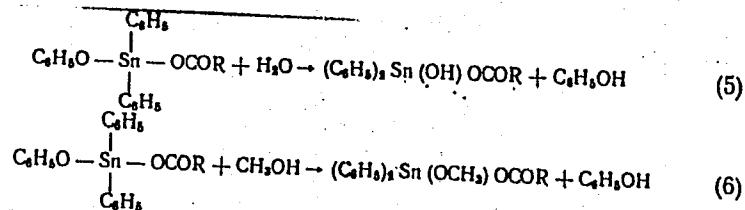
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This is explained by

$$C_6H_5O-\underset{\underset{C_6H_5}{|}}{\overset{\overset{C_6H_5}{|}}{Sn}}-OCOR + H_2O \rightarrow (C_6H_5)_2 Sn (OH) OCOR + C_6H_5OH \qquad (5)$$

$$C_6H_5O-\underset{\underset{C_6H_5}{|}}{\overset{\overset{C_6H_5}{|}}{Sn}}-OCOR + CH_3OH \rightarrow (C_6H_5)_2 Sn (OCH_3) OCOR + C_6H_5OH \qquad (6)$$

The same reaction was performed with (A) triphenyl lead monohydroxide
and a) in c) methanol, d) dioxan, and e) sulfuric ether; furthermore
with (B) triethyl lead monohydroxide with a) and b). In c) the filtrate
resulting from precipitation and filtering of the scanty diphenyl lead
oxide precipitate was treated with aqueous alkali. A white precipitate
formed from which phenol was isolated (yield 38%, here and later related
to initial A or B). By boiling methanol, the water-insoluble precipitate
was separated into A and diphenyl lead oxide (C). Total yield in C from
the reaction mixture: 35% of the theoretical value. A reacted slowly
with a) in d) owing to its poor solubility. Nevertheless, 40% of phenol
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Regrouping of some organotin and...   S/020/61/141/006/017/021
B103/B147

was isolated after long standing in the dark at room temperature and subsequent heating for 3 hr at 50°C or for 1 hr at 70°C. A was not completely consumed. The reaction of a) in e) was impeded by the poor solubility. Also in this case, a compound was dissolved after 2 hr of shaking, which yielded phenol (3%) after hydrolysis. A slight quantity of gas escaped in the initial stage of the reactions in d) and e). The results were less clear in case B with a) and with perbenzoic acid. On standing for 36 hr, at -10°C the peroxide compound was slowly regrouped. Snow white large crystals of triethyl lead acetate were precipitated (melting point 158°C, yield 75%). B reacted with a) in aqueous solution rather rapidly at room temperature with slight gas liberation. After 24 hr standing in the dark, no peroxide oxygen was found, but acetaldehyde (owing to oxidation of ethanol) as well as tetraethyl lead (owing to disproportionation of triethyl lead acetate or diethyl lead diacetate). The reaction of B with perbenzoic acid in e) was similar to that with a). After standing for 1 hr at -20 to -10°C and subsequently for 12 hr at room temperature, no peroxide oxygen was found. Triethyl lead benzoate (melting point $125 - 127^{\circ}$C, yield 35%) was isolated from the solution. Moreover, a readily water-soluble organolead compound formed which was

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Regrouping of some organotin and...   S/020/61/141/006/017/021
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not further investigated. A water-insoluble precipitate, diethyl lead
dibenzoate (melting point 162°C), precipitated from its aqueous solution
after long standing in air. There are 14 references: 3 Soviet and 11
non-Soviet. The three most recent references to English-language
publications read as follows: P. D. Bartlett, D. M. Simons, J. Am. Chem.
Soc., 82, 1753 (1960); E. Buncel, A. G. Davies, J. Chem. Soc., 1958,
1550; R. K. Ingham et al. Chem. Rev., 60, 460 (1960).

ASSOCIATION: Nauchno-issledovatel'skiy institut khimii pri Gor'kovskom
                gosudarstvennom universitete im. N. I. Lobachevskogo
                (Scientific Research Institute of Chemistry of the Gor'kiy
                State University imeni N. I. Lobachevskiy)

PRESENTED: July 13, 1961, by M. I. Kabachnik, Academician

SUBMITTED: July 12, 1961

Card 5/5

BRILKINA, T.G.; SAFONOVA, M.K.; SHUSHUNOV, V.A.

Triphenyl lead oxide. Zhur.ob.khim. 32 no.8:2684-2686 Ag '62.

(MIRA 15:9)

(Lead compounds)

ACCESSION NR: AT4028346

S/0000/63/000/000/0291/0297

AUTHOR: Aleksandrov, Yu. A.; Brilkina, T. G.; Shushunov, V. A.

TITLE: Some tin and lead organic peroxide compounds

SOURCE: Soveshchaniye po khimii perekisny*kh soyedineniy. Second, Moscow, 1961. Khimiya perekisny*kh soyedineniy (chemistry of peroxide compounds); Doklady* soveshchaniy. Moscow, Izd-vo AN SSSR, 1963, 291-297

TOPIC TAGS: tin, lead, peroxide, tin organic compound, lead organic compound, peroxide compound, metal-organic compound, metal-organic peroxide

ABSTRACT: Results of the investigation of some properties and reactions of triethyl tin peroxide, tert-butal triethyl lead peroxide, α-cumyl triethyl lead peroxide, di-tri-ethyl lead-n-di-isopropobenzene diperoxide, as well as triphenyl-tin-peracetate and triphenyl-tin-perpropenate, triphenyl-lead-peracetate, triethyl-lead peracetate and triethyl-lead perbenzoite are related in this article. The peroxide compounds were easily hydrolyzed by water with the formation of triethyl-tin monohydroxide (or triethyl lead monohydroxide) and hydrogen peroxide (or the corresponding hydro-peroxide) at room temperature. The results of the analysis are presented in a table. The above mentioned compounds were produced, precipitated, and characterized for the

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ACCESSION NR: AT4028346

first time. The thermal decay of triethyl tin peroxide and its reaction with hexa-ethyldi-tin in a n-ionane solution was investigated. Definite results were obtained which indicate the decay of triphenyl tin peracetate and triphenyl tin perproponate, as well as triphenyl lead peracetate by means of regrouping. Orig. art. has: 3 formulas, 6 figures and 1 table.

ASSOCIATION: Gor'kovskiy gosudarstvenny*y universitet im. N.I. Lobachevskogo (Gorky State University)

SUBMITTED: 13Dec63

DATE ACQ: 06Apr64

SUB CODE: CH

NO REF SOV: 011

ENCL: 00

OTHER: 011

Card   2/2

L 05318-67   EWP(j)/EWT(m)/EWP(t)/ETI   IJP(c)   RM/WW/JD

ACC NR: AM6021382

Monograph

$3\,8$ UR/

Brilkina, Tamara Grigor'yevna; Shushunov, Vasiliy Alekseyevich

Reactions of organometallic compounds with hydrogen and peroxides (Reaktsii metalloogranicheskikh soyedineniy s kislorodom i perekisyami) Moscow, Izd-vo "Nauka," 1966. 265 p. biblio. (At head of title: Akademiya nauk SSSR. Otdeleniye obshchey i tekhnicheskoy khimii) Errata slip inserted. 3300 copies printed./

TOPIC TAGS: organometallic compound, group I metal, group II metal, group III metal, group IV metal, organoboron compound, organosilicon compound, reaction with oxygen, reaction with peroxide

PURPOSE AND COVERAGE: This book is a review of studies on the reactions of oxygen and peroxides with organometallic compounds containing metals of groups I, II, III and IV. Reactions of organoboron and organosilicon compounds are included. Chapter 5 reviews the reactions of oxygen and peroxides with organometallic compounds containing different metals Me'-Me" and Me'-C-Me" bonds, designated as compounds of class 1 and class 2, respectively. Chapter 6 reviews the reaction mechanism of oxygen and peroxides with various organometallic compounds. There are 210 Soviet and 609 Western references. The references are given at the end of each chapter.

TABLE OF CONTENTS [abridged]:

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L 05318-67

ACC NR: AM6021382

Chapter I. Reactions of oxygen and peroxides with organometallic compounds con-
    taining metals of Group I -- 10
Chapter II. Reactions of oxygen and peroxides with organometallic compounds con-
    taining metals of Group II -- 50
Chapter III. Reactions of oxygen and peroxides with organometallic compounds con-
    taining metals of Group III -- 97
Chapter IV. Reaction of oxygen and peroxides of organometallic compounds con-
    taining metals of Group IV -- 143
Chapter V. Reactions of oxygen and peroxides with organometallic compounds con-
    taining atoms of different metals -- 232
Chapter VI. Reaction mechanism of oxygen and peroxides with organometallic com-
    pounds -- 243

SUB CODE: 07/ SUBM DATE: 15Jan66/ ORIG REF: 219/ OTH REF: 600

kh

Card 2/2

L 10803-67   EWT(m)/EWP(j)   RM/WW

ACC NR: AP7003493

SOURCE CODE: UR/0074/66/035/008/ 1430/1447

27

AUTHOR: Brilkina, T. G.; Shushnov, V. A.

ORG: State University, Gor'kiy (Gosudarstvennyy universitet)

TITLE: New developments in research on the oxidation of organometallic compounds

SOURCE: Uspekhi khimii, v. 35, no. 8, 1966, 1430-1447

TOPIC TAGS: organometallic compound, peroxide

ABSTRACT: The synthesis, properties, and reactions of organometallic compounds are currently subjects of intense interest, in view of their great theoretical and practical importance. Much of this interest has been centered upon the reaction of such compounds with oxygen, and since it has been demonstrated that such a reaction is accompanied by the formation of organometallic peroxides, attention has also been centered upon the reactions of various peroxides with organometallic compounds. The authors survey the general principles and mechanisms and specific examples of the oxidation of organometallic compounds by oxygen, as well as the reactions of organometallic compounds with organic and inorganic peroxides. [JPRS: 38,970] Orig. art. has: 39 formulas.

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 076 / OTH REF: 092

Card 1/1

UDC: 547.24:547.438

BRILL, A.

The adaptation of the natural gas cementation process in our metallurgical plants. METALURGIA SI CONSTRUCTIA DE MASINI (Metallurgy and Machine Construction.) 2:26:Feb 55

BRILL, A.; BUMBACESCOU, M.

Notes on action of streptomycin. Gruzlica 20:6 Suppl. 2:117-119
1952.   (CIML 24:2)

1. Brill, A., Acting Director of the Institute of Tuberculosis,
Bucarest; Bombacescou, M., Director of the Institute of Tuberculosis
Branch in Iasi.

BRILL, A.; BUMBACESCU, N.

Observations on thiosemicarbazones. Gruslica 20:6 Suppl. 2:119-120
1952.   (CLML 24:2)

1. Brill, A., Acting Director of the Institute of Tuberculosis,
Bucarest; Bombacescou, N., Director of the Institute of Tuberculosis
Branch in Iasi.

BRILL, A.; CLEPPER, I.

Ambulatory consolidation treatment of tuberculous patients having
resumed work; prevention of relapses. Rumanian M. Rev. 1 no.3:43-45
July-Sept 57.
            (TUBERCULOSIS, PULMONARY, ther.
                    ambulatory ther. of patients returned to work, prev.
                    of relapses)

RUMANIA / Pharmacology, Toxicology. Chemotherapeutic   V
          Agents, Antituberculous Agents.

Abs Jour: Ref Zhur-Biol., No 18, 1958, 85256.

Author : Brill, A., Baicoianu, S., Bungetianu, G., Butnaru,
          D., Buzescu, M., Herscovici, A.
Inst   : Not given.
Title   : The Treatment of Pulmonary Tuberculosis with Cyclo-
          serine.

Orig Pub: Ftiziologia, 1958, Vol 7, No 1, 25-30.

Abstract: 25 patients with bilateral chronic ulcero-caseo-
          cavernous tuberculosis of the lungs, with complete
          or partial resistance to tuberculostatic prepara-
          tions, were treated for 3 months with cycloserine.
          As the result of the treatment, there was clinical
          improvement (weight, fever, cough, sputum) in all
          patients. Slight changes in the X-ray picture

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RUMANIA / Pharmacology, Toxicology. Chemotherapeutic   V
Agents, Antituberculous Agents.

Abs Jour: Ref Zhur-Biol., No 18, 1958, 85256.

Abstract: were noted in six patients, and disappearance of
bacilli in the sputum in 10. In 3 patients there
were changes also in the EEG. The authors recom-
mend treatment with cycloserine only in cases which
are hospitalized, and in which there is resistance
to other chemotherapeutic preparations. From the
authors' summary.

Card 2/2

BRILL, A., conf.; CORNEA, P., dr.; IONESCU, I., dr.

Secondary effects of the treatment of tuberculosis with tuberculo-
static substances. Med. inter., Bucur 13 no.6:885-893 Je '61.

1. Din institutul de ftziologie.
          (ANTITUBERCULAR AGENTS toxicology)

BRILL', D.Ye., prof.; ORLOV, Yu.M., inzh.

Investigating valves for marine automatic control systems.
Sudostroenie 29 no.7:30-31 Jl '63.
(Marine engineering) (Hydraulic control)
(MIRA 16:9)

BRILL, Juliusz, prof. dr.

Actual problems in animal pasteurelloses. Zesz probl post nauk roln no.33:3-10 '61.

1. Katedra Mikrobiologii, Wydzial Weterynaryjny, Szkola Glowna Gospodarstwa Wiejskiego, Warszawa. Kierownik: Prof. dr. J. Brill

BRILL J., SZYNKIEWICZ Z.

Podloze wybiorcze do hodowli wloskowcow rozycy swin (Erysipele-
thrix rhusiopathiae). /Selective media for Erysiplelothrix
rhusiopathiae culture/ Med, dosw, mikrob. 2:3-4 1950 p. 407-
17.

1.   Of the Institute of Microbiology and Serology of the Medical
     Faculty of Warsaw University and of the Regional Institute
     of Veterinary Hygiene in Lodz.
     CIML   Vol. 20,   No. 10   Oct 1951

BRILL, J.; SZYNKIEWICZ, Z.

Selective substratum for the culture of Erysipelothrix rhusio-
pathiae. Med.wet. 6 no.9:516-517 Sept 50.   (CLML 20:5)

1. Of the Institute of Microbiology and Serology of the Veterinary
Faculty of Warsaw University and of the Regional Institute of Hy-
giene of the National Veterinary Institute Branch in Lodz (Head--
Prof.Juliusz Brill,M.D.).

BRILL, J.;GOLEBIOWSKI, S.

Salmonella dublin vectors in cattle in the Sieradz district.
Med. dosw. mikrob., Warsz. 4 no. 3:316-317 1952.   (CLML 23:3)

1. Summary of work progress presented at 11th Congress of Polish
Microbiologists held in Krakow May 1951. 2. Lodz.

BRILL, J.;GALIS, A.

Studies on bacteriophages for Salmonella dublin in feces in cattle.
Med. dosw. mikrob., Warsz. 4 no. 3:317-318 1952. (CLML 23:3)

1. Summary of work progress presented at 11th Congress of Polish
Microbiologists held in Krakow May 1951. 2. Warsaw.

BRILL, J.;MIKULASZEK, E.

Studies on antigen structure of Erysipelothrix rhusiopathiae.
Med. dosw. mikrob., Warsz. 4 no. 3:323-324 1952. (CLML 23:3)

1. Summary of work progress presented at 11th Congress of Polish
Microbiologists held in Krakow May 1951. 2. Warsaw.

BRILL, J.;SZYNKIEWICZ, Z.

Selective liquid culture media for Erysipelothrix rhusiopathiae.
Med. dosw. mikrob., Warsz. 4 no. 3:324-325 1952. (CLML 23:3)

1. Summary of work progress presented at 11th Congress of Polish
Microbiologists held in Krakow May 1951. 2. Warsaw.

BRILL, J.;WOYCIECHOWSKA, S.

Classification of strains of Erysiplelothrix rhusiopathiae according
to their hemagglutination properties. Med. dosw. mikrob. 5 no.3:291-292
1953.   (CIML 25:5)

1. Warsaw.

BRILL, J.;GOLEBIOWSKI, S.

Localization of Salmonella dublin in cowcarriers. Med. dosw. mikrob.
5 no.3:295-297 1953.   (CLML 25:5)

1. Lodz.

BRILL, J.;WOYCHIECHOWSKA, S.

Culture of infectious abortion in horses virus on human amnion transplants on chick embryo chorioallantois. Med. dosw. mikrob. 5 no.3:346-347 1953.   (CIML 25:5)

1. Warsaw.

POLAND/Diseases of Farm Animals - Diseases Caused By Viruses   R-2
            and Rickettsiae.

Abs Jour   : Ref Zhur - Biol., No 10, 1958, 45417

Author   : Brill, J., Golebiowski, St.
Inst   :
Title   : The Evaluation of Serological Reactions in the Flocks of
              Poultry with a Low Percentage of Infection with Salmonella
              Pullorum.

Orig Pub   : Roczn. nauk rolniczych, 1956, E67, No 3, 339-356.

Abstract   : No abstract.

Card 1/1

- 17 -

POLAND / Diseases of Farm Animals. Diseases Caused by Viruses   R
and Rickettsiae.

Abs Jour   : Ref Zhur - Biologiya, No 2, 1959, No. 7441

Author   : Aleksandrowicz, J.; Brill, J.; Perkowska, E.
Inst   : Not given
Title   : The Myelogram of Horses Sick with Infectious Anemia

Orig Pub   : Roczn. nauk rolniczych, 1956, E 67, No 4, 465-470

Abstract   : The blood picture was examined in some groups of
               horses; healthy, naturally diseased and artificially
               infected with infectious anemia (IA), suspected of
               suffering from IA and suffering from various abcesses.
               The corrolation of myelocytes to reticular cells amount-
               ed in healthy horses to 1.5 - 4, in horses sick with
               IA and in horses with abcesses to 1. The similarity of
               changes in the bone marrow which are observed in IA
               and in abcesses of an unknown etiology does not permit

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USSR / Diseases of Farm Animals. Diseases Caused by Viruses
and Rickettsiao.

Abs Jour   : Ref Zhur - Biologiya, No 2, 1959, No. 7440

until death of the animals occurs. In chronic IA
processes, H quantity may become increased to 10 - 14
and more in 80 fields of vision depending upon the
resistance of the organism and the remoteness of the
completed relapse. In other diseases H is only found
in cases of nuttalliosis, pneumonia and in surgical
processes; hemosiderocytes were absent in healthy
horses. -- L. S. Goberman

Card 2/2

13

POLAND / Microbiology.   Microbes Pathogenic to Man and   F
         Animals.   General Problems.

Abs Jour   : Ref. Zhur - Biol., No. 21, 1958, No. 95117

Author   : Brill, J.; Mikulaszek, E.; Truszczynski, M.
Inst   : —
Title   : Immunochemical Investigations into the Anti-
              genic Structure of the Erysipeloid Bacterium.

Orig Pub   : Bull. Acad. polon. sci., 1957, Cl. 2, 5, 405-411

Abstract   : Autolysates were prepared from the bacteria of
              Erysipelothrix rhusiopathiae type A by means of
              repeated freezing and thawing; a polysaccharide-
              protein and polysaccharide fraction were obtained
              from autolysates after boiling the extract in a
              1% acetic acid and by precipitation with alcohol
              in an acid medium. Nucleo-protein fractions were
              obtained from bacteria precipitates, which re-

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POLAND / Microbiology. Microbes Pathogenic to Man and   F
          Animals. General Problems.

Abs Jour   : Ref. Zhur - Biol., No. 21, 1958, No 95117

           polyssacharide haptenes enter into the composi-
           tion of E. rhusiopathiae: one (FPF) represents
           a specific type of serological reactions of mi-
           crobe connected with the protein and also en-
           tering partly into the nucleo-protein fractions
           composition and the second (APF) which is freed
           from the cellular membranes under the influence
           of alkali.

    Card 3/3

BRILL, J.; GOLEBIOVWSKI, S.

1st Isolation of Brucella suis from swine in Poland. Acta microb. polon.
6 no.2:115-132 1957.

1. Z Wojewodzkiego Zakladu Higieny Weterynaryjnoj w Lodzi i Katedry
Mikrobiologii Wydzalu Weterynaryjnego SGGW w Warszawie Wplynelo 20 lutego
1957 r.

(BRUCELLA
        suis. 1st isolation from swine in Poland (Pol))
(SWINE
        1st isolation of Brucella suis from swin in Poland (Pol))

BRILL, J.

J. Brill: "Schweinesalmonellosen," Monatshefte fuer Veterinaermedizin,
    (Leipzig), 12/15, 1 August 1957, pp. 409-412.

This was a paper delivered at the Main Meeting of the Scientific Society
for Veterinary Medicine in the DDR (13-14 October 1956) in Leipzig. The
author's address is given as Poland, Warszawa, ul. Grochowska 272.

POLAND/Microbiology - Microbes Pathogenic for Man and Animals.   F
                  Brucellae

Abs Jour   : Ref Zhur Biol., No 22, 1958, 99450

Author   : Drill, J., Golebiowski, St.
Inst   :
Title   : Complex Investigation of a Brucellosis Nidus

Orig Pub   : Roczn. nauk rolniczych, 1957, E 68, No 1, 93-120

Abstract   : No abstract.

Card 1/1

- 92 -

BRILL, J.

"Diagnosis of the tuberculosis of cattle."

p.84 (Sbornik. Rada Mechanisace A Elektrifikace Zemedelstvi, Vol. 5, no. 2,
        1958, Praha, Czechoslovakia)

Monthly Index of East European Accession (EEAI) IC, Vol. 7, No. 8, 1958

BRILL, J.; POLITYNSKA, E.; NOWICKI, A.; ADACH, D. (Warszawa)

The phages of Erysipelothrix rhusiopathiae of swine. Rocz nauk roln
wet 70 no.1/4:259-261 '60.   (EEAI 10:9)

(Swine)   (Erysipelas)

BRILL, J.; POLITYSNKA, E.(Warszawa)

Lysogenesis in Erysipelothrix rhusiopathiae suum. Rocz nauk roln
wet 70 no.1/4:261-262 '60.   (EEAI 10:9)

(Swine)   (Erysipelas)   (Lysine)

BRILL, J., prof., dr.; MIKULASZEK, E., prof., dr.

Results of the contest announced in 1958 by the Microbiological
Committee at the II Department of the Polish Academy of Sciences
and the Polish Microbiologists Society. Kosmos biol 10 no.6:651-652
'61.

1. Przewodniczacy Polskiego Towarzystwa Mikrobiologow (for Brill)
2. Przewodniczacy Komitetu Mikrobiologicznego Polskiej Akademii Nauk
(for Mikulaszek)

(Microorganisms)

BRILL, Juliusz; WOYCIECHOWSKA, Stanislawa; MALICKI, Konrad

Cultivation of the infectious equine abortion virus (Dimoek) in human amnion transplanted on chick embryo chorioallantois. Med. dosw.mikrob. 13 no.1:35-41 '61.

1. Z Osrodka Badania Ronienia Zakaznego Klaczy I. W., Warszawa i z Katedry Mikrobiologii Wydz. Wet. SGGW, Warszawa Kierownik: prof. dr Juliusz Brill.

(VIRUSES culture)

BRILL, Juliusz, prof. dr

Introduction to the Symposium. Zesz probl post nauk roln no. 46:7-10 '64.

Second International Meeting on Hemorrhagic Septicaemia organized by FAO in Kuala Lumpur, Malaya, January 29-February 3, 1962. Ibid.:89-93

1. Department of Microbiology, Faculty of Veterinary Medicine, Central College of Agriculture, Warsaw.

BRILL', O.D.

Cross sections of reactions of He3 with light nuclei. IAd. fiz. 1 no.1:
55-60 Ja '65.
(MIRA 18:7)

21 (8)

AUTHORS: Brill', O. D., Sumin, L. V.   SOV/89-7-4-13/28

TITLE: The Excitation Curves of the Reactions $B^{11}(d, 2n)C^{11}$, $Be^9(\alpha, 2n)C^{11}$, $B^{10}(d, n)C^{11}$, and $C^{12}(d, n)N^{13}$

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 4, pp 377-379 (USSR)

ABSTRACT: The excitation curves were measured by employing the pile method at the initial energies of 19.0 ± 0.2 Mev of deuterons and 38.5 ± 0.4 Mev of α-particles. The foil piles were irradiated by means of a beam emitted from a cyclotron. Piles of such foils were irradiated with deuterons, which were produced from a mixture of boron and polystyrene, the polystyrene serving as a binding agent. Foils with a thickness of 5-10 mg/cm^2 and a boron concentration of 20-30% were used. The energy of the bombarding particles in the individual foils was determined from the range-energy curves. The reduced activity of the foils was measured by means of a Geiger counter under standardized conditions. After irradiation of the boron-polystyrene foils with deuterons, the two half-lives 20.5 and 10 min were found for the duration of the decay of the nuclei C^{11} and N^{13}. These nuclei are produced in the following reactions on boron

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The Excitation Curves of the Reactions $B^{11}(d, 2n)C^{11}$,   SOV/89-7-4-13/28
$Be^9(\alpha, 2n)C^{11}$, $B^{10}(d, n)C^{11}$, and $C^{12}(d, n)N^{13}$

and carbon (which are contained in the foils):

(a) $B^{11}(d, 2n)C^{11}$, $Q = -5.0$ Mev

(b) $B^{10}(d, n)C^{11}$, $Q = +6.5$ Mev

(c) $C^{12}(d, t)C^{11}$, $Q = -12.5$ Mev

(d) $C^{12}(d, n)N^{13}$, $Q = -0.28$ Mev.

The N^{13}-nuclei are produced in the foils only in the reactions $C^{12}(d, n)N^{13}$, and therefore the excitation curve of this reaction was determined by separation of the activities of N^{13} and C^{11} with respect to the half-lives by employing the method of least squares. The relative course of the excitation curve of the reaction $C^{12}(d, n)N^{13}$ agrees with the results obtained by D. Wilkinson (Ref 2). The second diagram shows the curve for the activity yield of C^{11} in a pile of boron-polystyrene foils. At low deuteron energies the curve has a maximum, which corresponds to the reaction $B^{10}(d, n)C^{11}$, and shows an increase

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The Excitation Curves of the Reactions $B^{11}(d, 2n)C^{11}$,   SOV/89-7-4-13/28
$Be^9(\alpha, 2n)C^{11}$, $B^{10}(d, n)C^{11}$, and $C^{12}(d, n)N^{13}$

at energies above the threshold of the reaction $C^{12}(d, t)C^{11}$.
The 2 next diagrams show the excitation curves of the
reactions $B^{10}(d, n)C^{11}$, and $B^{11}(d, 2n)C^{11}$ after separation. At
low deuteron energies, the course of the excitation curves
may differ considerably from the true curve because of the
great thickness of the foils and because of the blurredness
of the deuteron beam with respect to the energies. In the case
of an irradiation of beryllium foils with α-particles a weak
activity with a half-life of the order of 100 min is found
besides C^{11} activity. The former may be attributed only to
$F^{18}(\tau_{1/2} = 110$ min). The authors thank N. A. Vlasov, S. P.
Kalinin, and A. A. Ogloblin for their interest in the present
investigation. There are 4 figures and 2 references, 1 of
which is Soviet.

SUBMITTED: March 26, 1959
Card 3/3

MESSBAUER, RUDOL'F L. [Mössbauer, Rudolf L.]; BRILL', O.D. [translator];
SHAPIRO, F.L.,red.

Resonance nuclear adsorption of γ-quanta by solids without
recoil. Usp. fiz. nauk 72 no.4:658-671 D'60.   (MIRA 13:11)
                    (Gamma rays)

PAUND, R.V.[Pound, R.V.]; BRILL', O.D.[translator]; SHAPIRO, F.L.,red.

Weight of photons. Usp. fiz. nauk 72 no.4:673-683 D'60.

(Photons)

(MIRA 13:11)

88564

24.6600 $(1138, 1160, 1158)$

$S/020/61/136/001/009/037$
$B019/B056$

AUTHORS: Brill', O. D., Vlasov, N. A., Kalinin, S. P., and
             Sokolov, L. S.

TITLE: The (n,2n)-Reaction Cross Section for C^{12}, N^{14}, O^{16} and F^{19}
             in the Energy Interval of From 10 - 37 Mev

TEXT: In the tests described here, the reactions $D(d,n)He^3$ and $T(d,n)He^4$
were used for the neutron production; they were induced by means of 20 Mev
deuterons. The experiments were made on the cyclotron of the Institut
atomnov energii AN SSSR (Institute of Atomic Energy, AS USSR). The neutron
energy was changed into platinum foils by slowing-down. Solid T+Zr-
targets and gaseous deuterium targets were used. In bombarding the
deuterium and tritium targets with fast deuterons, also neutrons with a
continuous spectrum were formed besides the monochromatic neutron group,
due to (d,pn) and (d,2n) reactions. The intensity of the continuous
spectrum exceeds that of the monochromatic spectrum somewhat, but there
exists an upper energy limit, which is about $E_n \simeq E_d$ - 4 Mev. For the

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The (n,2n)-Reaction Cross Section for C^{12}, N^{14}, O^{16} and F^{19} in the Energy Interval of From 10 - 37 Mev

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B019/B056

recording of the relative (n,2n) reaction yield with various neutron energies, special carbon, NH_4NO_3 and CF_2 specimens were produced. They were irradiated with neutrons at an angle of 0° under standard conditions; the β-particles were measured by means of a Geiger counter. The decay curves of the specimens were determined. The background caused by the target backing in the case of O^{15} amounted to 30%, with N^{13} to 80%, and in the case of F^{18} to 88%. The absolute cross section of the (n,2n) reaction was determined for carbon at E_n = 34 Mev, and for fluorine at E_n = 25 Mev and 14 Mev. The absolute cross section for nitrogen and oxygen was measured by comparing the annihilation γ-activity of NH_4NO_3 and water with the γ-activity of a carbon specimen by means of a scintillation counter. The results are graphically represented in Figs. 1-4. B.V. Rybakov and L. S. Sokolov are mentioned. There are 4 figures and 14 references: 4 Soviet, 1 French, 1 Canadian, and 1 US.

PRESENTED: July 8, 1960, by A. P. Aleksandrov, Academician

Card 2/4

88564

The (n,2n)-Reaction Cross Section for C^{12}, N^{14}, O^{16} and F^{19} in the Energy Interval of From 10 - 37 Mev

S/020/61/136/001/009/037
B019/B056

SUBMITTED: April 4, 1960

Legend to Fig. 1: Cross section of the reaction $C^{12}(n,2n)C^{11}$. a) Data according to Brolley et al. (Ref. 6).
Legend to Fig. 2: Cross section of the reaction $N^{14}(n,2n)N^{13}$. a) Data according to Paul et al. (Ref. 1). σ) Data according to Dudley et al. (Ref. 2). ß) Data according to Ashby et al. (Ref. 3).
Legend to Fig. 3: Cross section of the reaction $O^{16}(n,2n)O^{15}$.
Legend to Fig. 4: Cross section of the reaction $F^{19}(n,2n)F^{18}$. a) Data according to Paul et al. (Ref. 1). σ) Data according to Rayburn et al. (Ref. 4). ß) Data according to Ashby et al. (Ref. 3)

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Fig.1

Fig.2

Fig.3

Fig.4
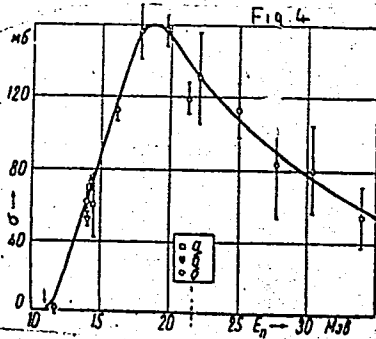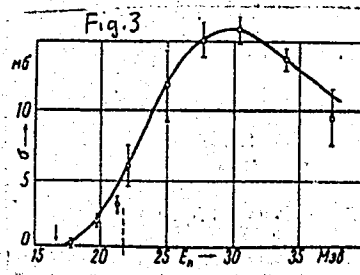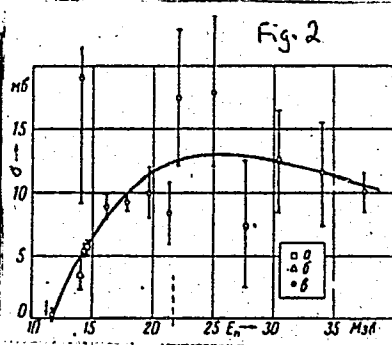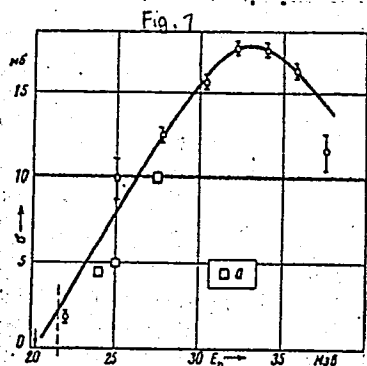
Card 4/4

BRILL', O.D.; PANKRATOV, V.M.; RUDAKOV, V.P.; RYBAKOV, B.V.

Cross sections of the reactions $T(d, n)He^4$ and $D(d, n)He^3$ in the 3 - 19 Mev. deuteron energy range. Atom. energ. 16 no.2:141-143 F '64.   (MIRA 17:3)

BRILL, O. D.; CHUYEV, V. I.; OGLOBLIN, A. A.

"Investigation of some reactions corresponding to triangular graphs."

report submitted for Intl Conf on Low & Medium Energies Nuclear Physics, Paris, 2-8 Jul 64.

Kurchatov Inst, Moscow.

BRILL', T.M., dotsent

Climate of Siberia and the microclimate of unheated buildings
of summer pioneer camps. Gig. i san. 24 no.8:37-42 Ag '59.
(MIRA 12:11)
1. Iz kafedry arkhitektury Tomskogo inzhenerno-stroitel'nogo
instituta.
(CLIMATE)

BRILL', T.M., inzh.

Use of prefabrication techniques and the economics of building children's health institutions. Sbor. nauch. trud. TISI 8:126-134 '61.
(MIRA 15:1)

1. Kafedra arkhitekturnogo proyektirovaniya obshchestvennykh zdaniy Moskovskogo arkhitekturnogo instituta.
(Health resorts, watering places, etc.) (Construction industry)

BRILLA, J.

An introduction to the relazation method.

P. 198. (Slovenska akademic vied. Ustav strvebnictva a architektury} PRACE, 1954 (Published 1956) Bratislava. Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

R/008/60/000/004/008/018
A125/A126

AUTHOR: Brilla, J.

TITLE: Mixed boundary problems of anisotropic plates

PERIODICAL: Studii şi Cercetări de Mecanica Aplicată, no. 4, 1960, 909 - 923

TEXT: Special attention was paid during the last few years to the mixed
boundary problems of thin plates, but only few papers deal with the solution of
mixed boundary problems of anisotropic plates, e. g., the articles by G. M. L.
Gladwell (Ref. 1: Some Mixed Boundary-value Problems of Aeolotropic Thin Plate
Theory, Quart. J. Mech. Appl. Math. XII, 1, 1959), H. Zorski (Ref. 2: Some Cases
of Bending of Anisotropic Plates. Arch. Mech. Stos., XI, 1, 1959) and the author
(Ref. 3: J. Brilla, Einige gemischte Randbedingungen anisotroper Platten. ZAMM
[sub. tipar]). The present article examines the general solution of a semi-in-
finite anisotropic plate, the contour of which is alternately free or rigidly
fixed, and has n free sections. The material has an elastic symmetry only in
relation to the median plane of the plate. The solution of the problem leads
to two singular integral equations, which can be reduced to a Hilbert - Riemann

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Mixed boundary problems of antisotropic plates

R/008/60/000/004/008/018
A125/A126

problem. Considered is an anisotropic elastic plate consisting of a material which has an elastic symmetry parallel to the median plane of the plate. The stress: specific distortion relations contain 13 elastic constants. The solution in the center of the plate, referred to a system of rectangular carthesian axes having the origin in the median plane, has to satisfy the equation of ani- sotropic plates. The general solution of the equation of anisotropic plates is known. Studying an anisotropic semi-infinite plate $y > 0$, for which the first derivatives of the w sag along the contour are given, the author deduces the expressions of the ϕ (z_1) and ψ (z_2) holomorphous functions in the z_1 and z_2 planes. He then considers a semi-infinite anisotropic plate $y > 0$ with mixed boundary conditions, having its contour alternately free or rigidly fixed. Con- sidered is finally a semi-infinite plate, stressed along its free contour by a constant bending moment m and a constant force q. If only one condition on the contour is changed the singularity has no more oscilatory character. The given solution is valid for the whole semi-infinite plate $y > 0$. The c_2 constant influences not only the sag of the semi-infinite plate, but also the distribu- tion of moments. There are 2 figures and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The two references to the English language publications read

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Mixed boundary problems of antisotropic plates

R/008/60/000/004/008/018
A125/A126

as follows:G. M. L. Gladwell, Some Mixed Boundary-value Problems of Aeolotro-pic Thin Plate Theory. Quart. J. Mech. Appl. Math., XII, 1, 1959; H. Zorski, Some Cases of Bending of Anisotropic Plates. Arch. Mech. Stos., XI, 1 (1959).

ASSOCIATION: Ustav Stavebnictva a Architektury SAV (Institute of Civil Engi-neering and Architecture) in Bratislava.

SUBMITTED: January 10, 1960

Card 3/3

34587

S/044/62/000/001/039/061
C111/C222

AUTHOR: Brilla, Jozef

TITLE: The solution of problems for orthotropic plates with the
method of affine transformations

PERIODICAL: Referativnyy zhurnal. Matematika, no. 1, 1962, 59,
abstract 1 B 285. ("Stavebn. časop.", 1960,8, no. 1,45-59)

TEXT: The solution of the equilibrium equations for orthotropic plates
with an orthotropy of the 2nd type (i.e., for such anisotropic plates
for which the bending resistance satisfies the condition :
$D_{xy}^2 = D_x D_y$; to this type of orthotropy belong cross-wise reinforced
concrete plates) is reduced to the solution of the equations for isotropic
plates with the help of an affine transformation $x = x'$, $y = \frac{1}{B} y'$.
Examples are given for the application of this method to problems with
different boundary conditions.

[Abstracter's note : Complete translation.]
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R/008/61/000/005/001/005
D289/D305

AUTHOR: Brilla, J.

TITLE: Contact problems of the elastic anisotropic half-plane

PERIODICAL: Studii și cercetări de mecanica aplicată, no. 5,
             1961, 959-987

TEXT: The article was presented at the International Congress of
Applied Mechanics held in Stresa from August 31 to September 7,
1960. It deals with contact problems of n rigid punches adhered to
an elastic anisotropic half-plane. In the present article, the
author first establishes the basic stress equations which, after
having introduced the stress function F, may be expressed by:

$$\sigma_x = \frac{\partial^2 F}{\partial y^2} \; , \quad \sigma_y = \frac{\partial^2 F}{\partial x^2} \; , \quad \tau_{xy} = - \frac{\partial^2 F}{\partial x \, \partial y} \qquad\qquad (2.2)$$

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He then examines an elastic anisotropic half-plane y>0, stressed along the y = 0 side by the p(x) and t(x) loads which satisfy the conditions of Dirichlet, and deduces the characteristic equation:

$$a_{11}\mu^4 - 2a_{16}\mu^3 + (2a_{12} + a_{66})\mu^2 - 2a_{26}\mu + a_{22} = 0 \qquad (3.7)$$

This equation agrees with the characteristic equation of the general solution of the anisotropic plate's differential equation, mentioned by S. G. Lekhnitskiy (Ref. 7: Anizotropnyye plastinki (Anisotropic Plates), Gostekhizdat, Moscow, 1953). According to Lekhnitskiy, the roots of this equation are not real but complex-conjugated two by two. The roots might be separated from each other, or might be repeated. The author only uses the repeated roots of the characteristic equation. Aussuming that the infinite stresses are equal to zero, only those terms of the general integral F can be used, for which $Re\{i\lambda\mu y\}<0$. In the boundary conditions,

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the stress function is expressed by:

$$F = \frac{1}{\pi} \operatorname{Re} \left\{ \frac{1}{\mu_2 - \mu_1} \int_0^\infty \frac{1}{\lambda^2} \left[\Psi(\lambda) \left(\mu_2 e^{i\lambda z_1} - \mu_1 e^{i\lambda z_2} \right) + X(\lambda) \left(e^{i\lambda z_1} - e^{i\lambda z_2} \right) \right] d\lambda \right\} \quad (3.11)$$

and the stresses by:

$$\sigma_x = 2\operatorname{Re}\left\{ \mu_1^2 \Phi'(z_1) + \mu_2^2 \Psi'(z_2) \right\}$$

$$\sigma_y = 2\operatorname{Re}\left\{ \Phi'(z_1) + \Psi'(z_2) \right\}$$

$$\tau_{xy} = -2\operatorname{Re}\left\{ \mu_1 \Phi'(z_1) + \mu_2 \Psi'(z_2) \right\} \quad (3.15)$$

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and

$$u = 2\mathrm{Re}\left\{p_1\, \Phi(z_1) + p_2\psi(z_2)\right\} - \gamma_0 y + \alpha_0,$$

$$v = 2\mathrm{Re}\left\{q_1\, \Phi(z_1) + q_2\psi(z_2)\right\} + \gamma_0 x + \beta_0 \tag{3.16}$$

in which $\Phi'(z_1)$ and $\psi'(z_2)$ are given by:

$$\Phi'(z_1) = \frac{1}{2\pi i(\mu_1 - \mu_2)} \int_{-\infty}^{\infty} \frac{\mu_2 p(\xi) + t(\xi)}{\xi - z_1}\, d\xi$$

$$\psi'(z_2) = -\frac{1}{2\pi i(\mu_1 - \mu_3)} \int_{-\infty}^{\infty} \frac{\mu_1 p(\xi) + t(\xi)}{\xi - z_2}\, d\xi \tag{3.14}$$

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D289/D305

and p_i and q_i by:

$$p_i = a_{11}\mu_i^2 + a_{12} - a_{16}\mu_i, \quad q_i = a_{12}\mu_i + \frac{a_{22}}{\mu_i} - a_{26} \quad (i = 1,2) \quad (3.17)$$

while α_0, β_0 and γ_0 are arbitrary constants which represent the rigid displacements and the rotation of the half-plane. These re-sults agree with the solution of G. N. Savin (Ref. 13: DAN.SSSR, XXIII, 3, 1939). The author then analyzes the mixed boundary pro-blem of an elastic anisotropic half-plane, denoting by $L = \sum_{j=1}^{p} L_j$ a finite number of $L_j = (a_j, b_j)$ segments of the $y = 0$ side of the $y>0$ half-plane and the rest of the side by $K = \sum_{j=0}^{p} K_f = \sum_{j=0}^{p} (b_j, a_{j+1})$

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in which $b_0 = -\infty$, $a_{p+1} = \infty$. Considered are the components of the displacement $u = g(x) + \delta_1$,

$$v = h(x) + kx + \delta_j$$

or their derivatives of the first order

$$\frac{\partial u}{\partial x} = g'(x) = f_1(x), \quad \frac{\partial v}{\partial x} = h'(x) + k = f_2(x)$$

given on L_j, and the components of the external load $p(x)$, $t(x)$ given on K. Using the formula of Plemelzh mentioned by N. I. Mush-khelishwili (Ref. 8: Singulyarnyye integral'nyye uravneniya (Singular Integral Equations), Gostekhizdat, Moscow, 1946) the author deduces a system of two singular integral equations:

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$$B_1 p(x) + \frac{A_1}{\pi} \int_L \frac{p(\xi)d\xi}{\xi - x} + \frac{A_2}{\pi} \int_L \frac{t(\xi)d\xi}{\xi - x} = f_1(x)$$

$$- B_1 t(x) + \frac{A_3}{\pi} \int_L \frac{p(\xi)d}{\xi - x} + \frac{A_1}{\pi} \int_L \frac{t(\xi)d}{\xi - x} = f_2(x) \qquad (4.7)$$

and then a non-homogeneous Hilbert-Riemann problem:

$$(B_1 - D)F^+(x) - (B_1 + D)F^-(x) = f(x) \qquad (4.15)$$

which supplies the general solution for n punches given in terms of two sectionally holomorphic functions: $F(z)$ and $\bar{F}(z)$:

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$$F(z) = \frac{1}{2\pi i (B_1 - D)X(z)} \int_L \frac{X^+(\xi)f(\xi)}{\xi - z} \, d\xi + \frac{P_{p-1}(z)}{X(z)} \qquad (4.16)$$

in which $X(z)$ is given by:

$$X(z) = \prod_{j=1}^{p} (z - a_f)^{1-m} (z - b_f)^m \qquad (4.17)$$

and m by:

$$m = \frac{1}{2\pi i} \ln \frac{B_1 - D}{B_1 + D} \qquad (4.18)$$

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and

$$\bar{F}(z) = - \frac{1}{2\pi i(B_1 + D)\bar{X}(z)} \int_L \frac{\bar{X}^+(\xi)\bar{T}(\xi)}{\xi - z} d\xi + \frac{P_{p-1}(z)}{\bar{X}(z)} \qquad (4.22)$$

in which $\bar{X}(z)$ is given by

$$\bar{X}(z) = \prod_{j=1}^{p} (z - a_j)^{1-\bar{m}}(z - b_j)^{\bar{m}} \qquad (4.23)$$

and $\bar{m}$ by:

$$\bar{m} = \frac{1}{2\pi i} \ln \frac{B_1 + D}{B_1 - D} \qquad (4.24)$$

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Contact problems of the ...

In $F(z)$ and $\bar{F}(z)$, z may be replaced by z_1 and z_2. Comparing $F(z)$ and $\bar{F}(z)$ with $\phi'(z_1)$ and $\psi'(z_2)$, one obtains

$$\phi'(z_1) = \frac{1}{(\mu_1 - \mu_2)(\bar{N} - N)} \left[(1 + \mu_2\bar{N})F(z_1) + (1 + \mu_2 N)\bar{F}(z_1)\right] \ ,$$

$$\psi'(z_2) = -\frac{1}{(\mu_1 - \mu_2)(\bar{N} - N)} \left[(1 + \mu_1\bar{N})F(z_2) + (1 + \mu_1 N)\bar{F}(z_2)\right] \qquad (4.26)$$

The functions $F(z)$ and $\bar{F}(z)$ thus give a solution not only along the sides of the half-plane, but also in its interior. The author finally treats some special cases by giving the solution of two rigidly interconnected punches and two punches free from each other. Conclusions: The characteristic stress distribution under rigid

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punches which act on an elastic anisotropic half-plane, is that
stress distribution which appears in the hypothesis of the continu-
ity of contacts of rigid punches and of the anisotropic half-plane.
It qualitatively differs from the stress distribution which appears
if the friction effect is neglected, as well as from the stress dis-
tribution appearing on an elastic isotropic or orthotropic half-
plane under the action of the punch. To avoid the rotation of a
system of rigidly interconnected punches, the load resultant should
act with an excentricity. There are 10 figures and 16 references:
15 Soviet-bloc and 1 non-Soviet-bloc. The reference to the Eng-
lish-language publication reads as follows: J. Brilla: Contact pro-
blems of an elastic anisotropic half-plane, Xth Int. Congress of
Appl. Mech. at Stresa, 1960.

ASSOCIATION: Ustav stavebnictva a architektury SAV (Institute of
             the Building Industry and Architecture, Slovak Aca-
             demy of Sciences), Bratislava

SUBMITTED: May 12, 1961

Card 11/11

BRILLA, J.

Contact problems of an elastic anisotropic half plane. Studii cerc mec apl 12 no.5:959-987 '61.

1. Ustav stavebnictva a architektury SAV, Bratislava.

BRILLA, J., inz., dr.

"Plane problems in the elasticity theory" by P.P. Teodorescu.
Reviewed by J. Brilla. Stav casopis 10 no.10:612-613'62.

BRILLA, Jozef, dr., inz.

Static solution of girder plates. Stav cas 11 no.1/2:38-52 '63.

1. Ustav stavebnictva a architektury, Slovenska akademia,vied, Bratislava.

BRILLIANT, B. A. i MALKINA, T. A.

19860 BRILLIANT, B. A. i MALKINA, T. A., K sravnitel'noy fiziologicheskoy khapakteristike ksepofil'nykh i mezofil'nykh lugovykh zlakov. Doklady Akad. Nauk SSSR, Novaya seriya, t. LXVII, No. 1, 1949, s. 102-12. -Bibliogr: 5 nazv.

SO: LETOPIS ZHURNAL STATEY, Vol. 27, MOSKVA, 1949.

SHUL'MEYSTER, Moisey Vladimirovich; BRILLIANT, M.D.; LARINA, V.F., red.; MALEK,
Z.N., tekhn. red.

[Monotype; arrangement and operation of typecasting composing machines
in two volumes] Monotip; ustroistvo i ekspluatatsiia bukvootlivnykh
nabornykh mashin v dvukh knigakh. Moskva, Gos. izd-vo "Iskusstvo."
Book 1. [Design of composing punching machines] Konstruktsiia naborno-
perforiruiushchei mashiny. 1961. 304 p. — — — [List of specifi-
cations of parts of composing-punching machines] Spetsifikatsiia-
ukazatel' detalei naborno-perforiruiushchikh mashin. 72 p.

(Typesetting machines)

(MIRA 14:8)

VOROB'YEV, A.I.; BRILLIANT, M.D.

Different erythrocyte populations in some anemic states. Vop.
biofiz.,biokhim.i pat.erit. no.2:226-233 '61.   (MIRA 16:3)

1. Iz III kafedry terapii (zav. chlen-korrespondent AMN SSSR
prof. I.A. Kassirskiy) TSentral'nogo instituta usovershenst-
vovaniya vrachey (dir. M.D. Kovrigina).
          (ERYTHROCYTES)   (ANEMIA)

BRILLIANT, M.D.; VOROB'YEV, A.I.

Effect of plasma on the resistance of the erythrocytes in blood
diseases. Probl.gemat.i perel.krovi no.5:7-13 '62.

(MIRA 15:8)

1. Iz 3-y kafedry terapii (zav. - chlen-korrespondent AMN SSSR
prof. I.A. Kassirskiy) TSentral'nogo instituta usovershenstvo-
vaniya vrachey (dir. M.D. Kovrigina).
        (BLOOD---DISEASES) (ERYTHROCYTES) (BLOOD PLASMA)

BRILLIANT, M.D.; VOROB'YEV, A.I.

Fractionation of erythrocytes according to their age characteristics. Vop.biofiz.,biokhim.i pat.erit. no.2:62-64 '61.

(MIRA 16:3)

1. Iz III kafedry terapii (zaveduyushchiy chlen-korrespondent AMN SSSR, professor I.A. Kassirskiy) TSentral'nogo instituta usovershenstvovaniya vrachey (direktor M.D. Kovrigina).

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SHUL'MEYSTER, Moisey Vladimirovich. Prinimali uchastiye:
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[Monotype; installation and operation of monotype casting
machines in two books] Monotip; ustroistvo i ekspluatatsiia
bukvootlivnykh nabornykh mashin v dvukh knigakh. Moskva,
Iskusstvo. Book 2. [Construction of an automatic casting
machine] Konstruktsiia otlivnogo avtomata. 1963. 392 p.
___ [Monotype; a catalog of parts of automatic casting
machines. Supplement to book 2 "Konstruction of an automatic
casting machine"] Monotip; spetsifikatsiia-ukazatel' detalei
otlivnykh avtomatov. Prilozhenie k knige 2 "Konstruktsiia
otlivnogo avtomata." 151 p.   (MIRA 17:4)

GEL'TS, V., inzh.; BRILLIANT, O., inzh. (Kiyev)

Coloring of polysterene. Prom. koop. 12 no.8:17 Ag '58.

(Styrene)   (Dyes and dyeing)

(MIRA 11:9)